

REMARKS

In response to the Office Action mailed June 5, 2003, please enter the following response.

The title of the invention has been changed as requested by the Examiner.

The Examiner has requested that a drawing change be made to show the subject matter of claim 8 in the figures. According to the Examiner's request, an amendment to figure 7 is submitted herewith together with a minor amendment to the text of the specification. Specifically, figure 7 is proposed to be amended to add a dashed line enclosing the circuit and mark the area within the dashed line with the reference number 54. The material within the dashed line 54 indicates a single semiconductor substrate. Accordingly, on the single semiconductor substrate are formed many circuit elements, included within them all the elements as claimed in claim 8.

This proposed change to the figure is not new matter because it is fully supported by claim 8 as originally filed, which is part of the original disclosure of the invention. Further, the specification states that the circuit of figure 7 will be formed on an integrated circuit. It is generally understood on the art that an integrated circuit is on a single semiconductor substrate. Indeed, it is generally accepted that the definition of integrated circuit is that it is on a single semiconductor substrate. In addition, the reference in claim 8 to these circuits being on a single semiconductor substrate is part of the original invention disclosure. A minor amendment to the text is requested in order to move the text of claim 8 into the specification namely that the integrated circuit as previously referenced in the specification is in fact, on a single semiconductor substrate. No new matter is inserted by this amendment and entry is respectfully requested.

The Examiner indicated that claims 1-12 were rejected under 35 U.S.C. § 112, the first paragraph. Applicants' traverse this rejection and believe that it does not apply with respect to claims 1-11. The only objection raised by the Examiner had to do with claim 12. Namely, the Examiner indicated that the word "load" is used in claim 12 was incorrect terminology. Since the objectionable language was only in claim 12, which is an independent claim, therefore the rejection is to be understood as applying only to claim 12 and not claims 1-11.

Claim 12 has been amended in order to correct the objection of the Examiner. In particular, the phrase "load circuit" has been replaced with the phrase "parallel protection element." Throughout the specification, and in other claims the element 3 as shown in figure 5, and other figures in the application has been referred to as "element 3" or in some cases a "parallel protection circuit 3." See for example page 12, line 21, this is the element which was intended to be referred to as the load of claim 12.

The Examiner rejected claims 2, 11 and 12 under 35 U.S.C. § 112. Applicants' have made a minor amendment to claim 11 to overcome this rejection and also an amendment to claim 12 as previously pointed out.

With respect to claim 2, the switching element which is normally off can be turned on, namely enabled by the temperature detection element. When the signal is removed, the switch is turned off again. Thus, the removal of the signal will cause the switch to turn off again, this happens when the temperature of the detection element is less than a predetermined threshold which will be the standard condition of the circuit. When the detection element exceeds a predetermined threshold temperature then the switching element is turned on and when the temperature reduces, so as to go below the predetermined threshold, the switching element can be turned back off again.

Within claim 11, the word "parallel" has been removed so as to avoid the issue raised by the Examiner. In addition, it is pointed out that the switching element is coupled to output a signal to the cutoff circuit. Claim 11 should therefore be allowable. It is noted that claim 11 was not rejected on prior art and should therefore be allowable as now presented.

Claim 12 has been amended as previously pointed out. Claim 12 was not rejected on prior art and should therefore be allowable.

Claim 13 has been added in combination of prior claims 1, 3, 4, and 7. It has been indicated by the Examiner that this claim will be allowed.

Claims 1, 3, 4-6, 8-9 were rejected on various grounds including a Ahuja alone or Ahuja in combination with Hyink et al. Applicants' believe that claim 1, as amended and all claims dependent thereon as now presented are allowable over the prior art.

The present invention provides a temperature detection element as specified in claim 1. This temperature detection element is adjacent to a protection element. When the temperature of the protection element exceeds a predetermined threshold, a signal is created which is sent to the switching element to cut-off the current in the line in order to protect downstream equipment. This is drastically different than a Ahuja.

First, the Ahuja circuit does not have a temperature detecting element. Applicants' have reviewed Ahuja in detail and have been unable to locate any reference to a temperature detection element. If such is present in Ahuja, Applicants' request that the Examiner point out such an element.

It is seen in Ahuja that a fuse is present, which fuse blows when the current exceeds a threshold. There is no statement in Ahuja that the fuse performs a temperature sensing function of some other element. Rather, the fuse of Ahuja seems to be sensitive to the amount of current running through the fuse itself. There is no description or suggestion to a temperature detection of a different device, such as a protection element, which is occurring. Accordingly, Ahuja fails to teach a temperature detection element which detects the temperature of a separate element such as a protection element.

Ahuja is different for another important reason. Ahuja discloses a surge protector using a fuse for detecting an excessive voltage. An important difference between Ahuja and the present invention is that the cut-off element of the invention is an automatically restartable element, see page 8, lines 1-3 of the specification; this is not the case with the fuse of Ahuja. Furthermore, a fuse cannot be considered a normally off switching element. Using a normally off switching element is helpful to obtain a restartable turn off element. Accordingly, the present invention is believed clearly patentable over a Ahuja and the fuse which he teaches.

Allowance of the claims are respectfully requested.

The Commissioner is authorized to charge any additional fees due by way of this Amendment, or credit any overpayment, to our Deposit Account No. 19-1090.

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All of the claims remaining in the application are now clearly allowable.  
Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,

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